polytetrafluoroethylene, graphite and molybdenum disulfide.

38. Coating composition according to claim 34, wherein component a) is a curable or cross-linkable polymer or copolymer which has an average molecular weight in the range from 300 to 25,000.

39. Coating composition according to claim 34, wherein component a) is a curable or cross-linkable polymer or copolymer which is selected from (meth)acrylic resins, epoxy resins and polyurethanes containing isocyanate groups.

40. Coating composition according to claim 34, wherein component a) is a physically setting polymer selected from polyolefins containing, in copolymerized form, units having functional groups, polyamides, saturated polyesters, poly(meth)acrylates and copolymers thereof.

41. Coating composition according to claim 34, wherein the hydraulically setting inorganic binder is selected from waterglass, cement, lime and gypsum.

REMARKS

Now claims 26-41 are in the case. Applicants have amended the specification and claims in an effort to address the informalities noted in the last Office Action in the parent

application. Consideration of these new claims and the amended application is respectfully requested.

It is believed that new claims 26-41 clearly define a novel and non-obvious advance in the art. In the previous application the Examiner relied upon U.S. Patent Nos. 5,431,831 and 5,180,509.

In the new claim 26, the curable or cross-linkable monomer, polymer or copolymer of component (a) has been defined on the basis of the statements in the specification, page 6, lines 3 to 15 and original claim 9. The physically setting polymer has been defined on the basis of page 7, lines 6 to 9 and original claim 11. Recitation of polyolefins in component (a) has been deleted.

As to component (b), the peroxo compounds and peracids and salts thereof have been deleted so too, the $\beta\gamma$-unsaturated carboxylic acids have been deleted. All of the recited explosive substances have been deleted, as well.

Component (c) was more particularly defined on the basis of original claim 6.

New claim 34 is directed to an anti-seize composition which differs from those of claim 26 in component (b) which includes inorganic carbonates or hydrogen carbonates as disclosed in original claim 3.

The Examiner has cited U.S. 5,431,831, column 4, lines 4 to 9 in support of the § 102 rejection. There, a composition is disclosed which comprises graphite, a polymerizable liquid

acrylate ester monomer and a peroxy polymerisation initiator. Claim 26 and also claim 34 no longer comprise a peroxy polymerisation initiator. Therefore, the claimed subject-matter is novel over said U.S. patent.

The claimed subject-matter is also novel over U.S. 5,180,509. This patent discloses a composition which contains graphite dispersed in a lubricant based material, see column 2, lines 52 to 54. Further, in the lubricant based material a "polyalkylene" is dissolved, see column 2, lines 54 and 55. The meaning of polyalkylene can be taken from column 3, lines 37 to 40, i.e. it is a polyolefin, such as polyethylene, polypropylene, polybutylene etc. Further, the composition may contain an adjusting component which is a friction increasing filler, see column 4, lines 3 and 4. Such adjusting component is inter alia calcium carbonate, magnesium carbonate and zinc carbonate, see column 3, line 68 and column 4, line 1 and 2.

New claim 34 is intended to cover an anti-seize composition which contains inorganic carbonates or hydrogen carbonates as component (b). A limitation over U.S. 5,180,509 is achieved by the expression "anti-seize composition" vs. lubricant composition. A lubricant composition is not an anti-seize composition. Lubricant compositions are introduced between opposed solid surfaces, in order to prevent these surfaces from coming into contact with each other while facilitating any relative motion between the surfaces, see column 1, lines 12 to

16 to U.S. 5,`80,509. This purpose is expressed in the composition in that it comprises a lubricant base material which is an oil or grease, see column 5, lines 1 to 3.

An anti-seize composition is, in contrast thereto, intended to be used for locking and/or sealing the parts of connections of all kinds. This is just the opposite of allowing the relative motion between the parts as is achieved with a lubricant composition. As a consequence an anti-seize composition will necessarily be different from a lubricant composition. Further, a limitation over U.S. 5,180,509 is achieved by means of component (a) which does not include polyolefins. The subject-matter of new claims 34-41 is therefore novel over said U.S. patent. The subject-matter of claims 26-33 is also novel as already acknowledged by the Examiner as the claimed composition includes as component (b) compounds which are not disclosed in U.S. 5,180,509.

With regard to obviousness under 35 U.S.C. § 103, the Examiner again has cited to U.S. 5,180,509. As already mentioned, said patent discloses a composition which is a lubricant composition whereas the present invention is directed to an anti-seize composition. In addition to locking or sealing the parts of connections, a further purpose of an anti-seize composition is to allow the loosening and tightening of the locked connections. This is very problematic since it faces the danger of seizing and jamming and so far this problem has not

been satisfactorily solved.

The object on which the present invention is based is therefore to provide a coating composition which on the one hand is suitable for filing, sealing and/or locking of socket/pin or threaded connections and on the other hand reduces the danger of seizing and jamming when these couples are loosened and/or tightened.

U.S. 5,180,509 does not give the slightest hint to solve this problem. It refers to a lubricant composition which clearly teaches away from the present invention. This is in particular true if one considers the purpose of the adjusting component. It is used to increase the friction between opposed solid surfaces, see column 5, lines 3 to 9. According to the present invention a composition is provided which contains a substance which releases gases at elevated temperatures in order to break up the sealing or locking between the connected parts. There is no motivation for a person skilled in the art to consider for this purpose any of the gas-releasing substances listed in claims 26 or 34. This holds also true for the inorganic carbonates or hydrogen carbonates as there is nothing in U.S. 5,180,509 which suggests that carbonates can be used to break up the sealing or locking between connected parts. It was therefore not obvious to provide the claimed subject-matter.

As to the Examiner's objections under 35 U.S.C. 112 we would like to point out the following:

The objections with regard to curable or cross-linkable compounds and physically setting polymers are removed by the new claims in which said compounds and polymers are more precisely defined. Hydraulically setting inorganic substances are well-known in the art and not indefinite. This is confirmed by the enclosed copy of the *Webster's Dictionary*, Entry "Hydraulic" where reference is made to setting or hardening under water. Hydraulic binders are defined in the enclosed copy of *Ullmanns Encyclopadie der Technischen Chemie*, 3rd edition, 1969, Vol. 19, page 1. The paragraph after the list of contents reads in English:

> "Cement is a hydraulic binder. This is a substance which after mixing with water is setting at the air as well as under water and remains hard."

Further, the Examiner referred to numerous mis-named compounds. No mis-named compounds are evident to applicants. The Examiner should indicate which compounds he means and they will then be corrected, if appropriate.

Finally, applicants do not understand the Examiner's § 112 rejection with regard to old claim 24. The Examiner does not say why the claim is confusing. His objection may be due to "polyolefins containing, in copolymerized form, units having functional groups." This refers to polyolefins which are copolymers and which are built from an olefin such as ethylene of

propylene, by copolymerizing it with an olefin having a functional group. An olefin with a functional group is for example vinylacetate, acrylic or methacrylic esters etc. Thus, the copolymer contains units derived from the olefin and units derived from an olefin having said functional groups.

In view of the foregoing, applicants request an early allowance of the application.

Dated: 3-3-03

Respectfully submitted,

Thomas G. Scavone
Registration No. 26,801
Attorney for Applicant

SECOND COLLEGE EDITION

WEBSTER'S NEW WORLD DICTIONARY

OF THE AMERICAN LANGUAGE

DAVID B. GURALNIK, *Editor in Chief*

SIMON AND SCHUSTER

BEST AVAILABLE COPY

Copyright © 1984 and 1970, 1972, 1974, 1976, 1978, 1979, 1980, 1982 by Simon & Schuster, Inc.
All rights reserved
including the right of reproduction
in whole or in part in any form
Published by New World Dictionaries/Simon and Schuster
A Division of Simon & Schuster, Inc.
Simon & Schuster Building
Rockefeller Center
1230 Avenue of the Americas
New York, New York 10020
SIMON and SCHUSTER, TREE OF KNOWLEDGE, WEBSTER'S NEW WORLD, and colophons are registered trademarks of Simon & Schuster, Inc.

Dictionary Editorial Offices: New World Dictionaries,
850 Euclid Avenue, Cleveland, Ohio 44114.

Manufactured in the United States of America
20 19 18 17 16 15 14 13 12

Library of Congress Cataloging in Publication Data
Main entry under title:

Webster's New World dictionary of the American language.

1. English language—Dictionaries. 2. Americanisms.
I. Guralnik, David Bernard, 1920-
PE1625.W34 1984 423 81-85763
ISBN 0-671-41809-2 (indexed)
ISBN 0-671-41807-6 (plain edge)
ISBN 0-671-41811-4 (pbk.)
ISBN 0-671-47035-3 (LeatherKraft)

BEST AVAILABLE COPY

a respiratory disorder caused by an abnormal membrane of protein lining the alveoli of the lungs

hy·a·lite (hī'ə līt') *n.* [HYAL(O)- + -ITE¹] a colorless variety of opal, transparent or whitish and translucent

hy·a·lo- (hī'ə lō', hī al'ə) [< Gr. *hyalos*, glass] *a combining form meaning* glass, glassy, transparent *[hyaloplasm]:* also, before a vowel, **hyal-**

hy·al·o·gen (hī al'ə jən) *n.* [prec. + -GEN] any of the various insoluble, mucoidlike substances found in animal tissue and producing hyalins upon hydrolysis

hy·a·loid (hī'ə loid') *adj.* [Gr. *hyaloeidēs* < *hyalos*, glass + *eidos*, appearance] *same as* HYALINE

hyaloid membrane a delicate membrane containing the vitreous humor of the eye

hy·a·lo·plasm (hī'ə lō plaz'm, hī al'ə-) *n.* [HYALO- + -PLASM] the basic substance of the protoplasm of a cell: it is clear and fluid, as distinguished from the granular and reticulate parts

hy·al·u·ron·ic acid (hī'əl yoo rän'ik) [< HYAL(O)- + Gr. *ouron*, urine + -IC] a polymer occurring naturally in such body fluids as the vitreous humor of the eye and the synovial fluid of the joints, and responsible for their jelly-like consistency

hy·al·u·ron·i·dase (-rän'ə dās') *n.* [< prec. + -ID(E) + -ASE] an enzyme that inactivates hyaluronic acid by breaking down its polymeric structure, thus promoting the diffusion of substances through tissues: found in sperm cells, certain venoms and bacteria, etc.

hy·brid (hī'brid) *n.* [L. *hybrida*, offspring of mixed parentage] 1. the offspring produced by crossing two individuals of unlike genetic constitution; specif., the offspring of two animals or plants of different races, varieties, species, etc. 2. anything of mixed origin, unlike parts, etc. 3. *Linguis.* a word made up of elements from different languages, as *companionway* —*adj.* of, or having the nature of, a hybrid —hy'brid·ism, **hy·brid'i·ty** *n.*

hy·brid·ize (hī'brə dīz') *vt., vi.* **-ized', -iz'ing** to produce or cause to produce hybrids; crossbreed —**hy'brid·i·za'tion** *n.* —**hy'brid·iz'er** *n.*

hybrid vigor *same as* HETEROSIS

hyd. 1. hydraulics 2. hydrostatics

hy·da·thode (hī'də thōd') *n.* [G. < Gr. *hydōr* (gen. *hydatos*), WATER + *hodos*, way] a specialized microscopic pore or stoma on the leaves of many plants, through which water may be excreted

hy·da·tid (-tid) *n.* [Gr. *hydatis* (gen. *hydatidos*), watery vesicle < base of *hydōr*, WATER] a cyst containing watery fluid and the larvae of certain tapeworms, esp. a tapeworm (genus *Echinococcus*) found in the body of many animals, canines —*adj.* of or like such a cyst

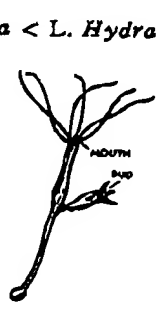
Hyde (hīd) 1. **Douglas**, 1860–1949; Ir. statesman & writer; president of Eire (1938–45) 2. **Edward**, see CLARENDON, 1st Earl of 3. *see* Dr. JEKYLL

Hyde Park 1. public park in London, noted for the public meetings on popular issues that take place there 2. village in SE N.Y., on the Hudson: site of the estate & burial place of Franklin D. Roosevelt

Hy·der·a·bad (hī'dər ə bad', -bäd'; hī'drə-) 1. city in SC India; capital of Andhra Pradesh state: pop. 1,119,000 2. city in S West Pakistan, on the Indus River; pop. 242,000 3. former state of SC India

hydr- *same as* HYDRO-: used before vowels

Hy·dra (hī'drə) [ME. *ydre* (< OFr. < L.), *ydra* < L. *Hydra* < Gr., water serpent, akin to *hydōr*, WATER] 1. *Gr. Myth.* the nine-headed serpent slain by Hercules: when any one of its heads was cut off, it was replaced by two others 2. a long, irregular, S constellation, south of Cancer, Leo, and Virgo —*n., pl.* **-dras, -drae** (-drē) [h-] 1. any persistent or ever-increasing evil with many sources and causes 2. any of a group (as genus *Hydra*) of small, soft-bodied, freshwater polyps with a tubelike body and a mouth surrounded by tentacles



HYDRA (1/4–1/2 inch in length)

hy·drac·id (hī dras'id) *n.* an acid that does not contain oxygen, as HCl, H_2S, HCN, etc.

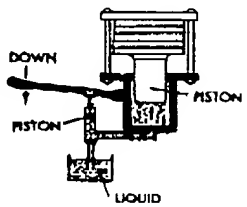
hy·dran·ge·a (hī drān'jə, -dran'-; -jē ə) *n.* [ModL. < HYDR- + Gr. *angeion*, vessel] any of a genus (*Hydrangea*) of shrubby plants of the saxifrage family, with opposite leaves and large, showy clusters of white, blue, or pink flowers, often sterile

☆hy·drant (hī'drənt) *n.* [< Gr. *hydōr*, WATER] 1. a large discharge pipe with a valve for drawing water from a water main: fireplug 2. [Dial.] a faucet

hy·dras·tis (-tis) *n.* [see prec.] the rhizome and roots of the goldenseal, containing hydrastine: formerly much used in medicine

hy·drate (hī'drāt) *n.* [HYDR- + -ATE²] a compound formed by the chemical combination of water and some other substance in a definite molecular ratio *[plaster of Paris, $2CaSO_4 \cdot H_2O$, is a hydrate]* —*vt., vi.* **-drat·ed, -drat·ing** 1. to become or cause to become a hydrate 2. to combine with water —**hy·dra'tion** *n.* —**hy'dra·tor** *n.*

hy·drau·lic (hī drô'lik, -drä'-) *adj.* [Fr. *hydraulique* < L. *hydraulicus* < Gr. *hydraulikos*, of a water organ < *hydraulis*, water organ < *hydōr*, WATER + *aulos*, tube, pipe < IE. base **aulos*, whence (with metathesis) L. *alvus*, the belly] 1. of hydraulics 2. operated by the movement and force of liquid; specif., operated by the pressure created when a liquid is forced through an aperture, tube, etc. *[hydraulic brakes]* 3. setting or hardening under water *[hydraulic mortar]* —**hy·drau'li·cal·ly** *adv.*



HYDRAULIC PRESS

hydraulic ram a device for delivering a small portion of a flowing liquid to a higher elevation by using the momentum of the flowing liquid as the energy source

hy·drau·lics (-liks) *n.pl. [with sing. v.]* the branch of physics having to do with the mechanical properties of water and other liquids in motion and with the application of these properties in engineering

hy·dra·zide (hī'drə zīd') *n.* [HYDRAZ(INE) + -IDE] any of several derivatives of hydrazine in which at least one of the hydrogens has been replaced by an acyl group, RCO–

hy·dra·zine (hī'drə zēn', -zin) *n.* [HYDR- + AZINE] a colorless, corrosive, liquid base, NH_2NH_2, used as a jet and rocket fuel, a reducing agent, antioxidant, etc.

hy·dra·zo·ate (hī'drə zō'āt) *n.* any salt of hydrazoic acid

hy·dra·zo·ic acid (-ik) [HYDR- + AZO- + -IC] a colorless, volatile, poisonous acid, HN_3, from which the hydrazoates are derived: used in the manufacture of explosives

hy·dric (hī'drik) *adj.* [HYDR- + -IC] of or containing hydrogen

-hy·dric (hī'drik) [see prec.] *a combining form meaning* having (a specified number of) hydroxyl radicals or replaceable hydrogen atoms in the molecule *[monohydric]*

hy·dride (hī'drid) *n.* [HYDR- + -IDE] a compound of hydrogen with another element or a radical

hy·dri·od·ic acid (hī'drē ād'ik) [HYDR- + IODIC] a strong acid, HI, that is a solution of the gas hydrogen iodide in water

hy·dro¹ (hī'drō) *n., pl.* **-dros** [Brit. Colloq.] a place, such as a spa, where people go to get hydropathic treatments

hy·dro² (hī'drō) *n.* [Canad.] 1. hydroelectric power 2. *pl.* **-dros** a hydroelectric power plant —*adj.* [Canad.] hydroelectric

hy·dro- (hī'drō, -drə) [< Gr. *hydōr*, WATER] *a combining form meaning:* 1. water *[hydrostatic, hydrometer]* 2. containing hydrogen *[hydrocyanic]*

hy·dro·bro·mic acid (hī'drə brō'mik) [HYDRO- + BROMIC] a strong acid, HBr, that is a solution of the gas hydrogen bromide in water

hy·dro·car·bon (hī'drə kär'bən) *n.* any compound containing only hydrogen and carbon: benzene and methane are hydrocarbons

hy·dro·cele (hī'drə sēl') *n.* [L. < Gr. *hydrokēlē* < *hydōr*, WATER + *kēlē*, tumor: see -CELE] a collection of watery fluid in a cavity of the body, esp. in the scrotum or along the spermatic cord

hy·dro·ceph·a·lus (hī'drə sef'ə ləs) *n.* [ModL. < Gr. *hydrokephalon* < *hydōr*, WATER + *kephalē*, head: see CEPHALIC] a condition characterized by an abnormal increase in the amount of fluid in the cranium, esp. in young children, causing enlargement of the head and destruction of the brain: also **hy'dro·ceph'a·ly** (-lē) —**hy'dro·ce·phal'ic** (-sə fal'ik) *adj., n.* —**hy'dro·ceph'a·lous** (-ləs) *adj.*

hy·dro·chlo·ric acid (hī'drə klôr'ik) [HYDRO- + CHLORIC] a strong, highly corrosive acid, HCl, that is a solution of the gas hydrogen chloride in water: it is widely used in ore processing, for cleaning metals, as a reagent, etc.

hy·dro·chlo·ride (-klôr'īd) *n.* a compound of hydrochloric acid and an organic base

hy·dro·col·loid (-käl'oid) *n.* [HYDRO- + COLLOID] any of several substances that form gels with water

☆hy·dro·cor·ti·sone (-kôrt'ə sōn', -zōn') *n.* [HYDRO-

BEST AVAILABLE COPY

Ullmanns Encyklopädie der technischen Chemie

Dritte, völlig neu gestaltete Auflage

In Gemeinschaft mit

Prof. Dr.-Ing. S. Balke, München - Prof. Dr. K. Bernhauer, Stuttgart - Dr. D. Delfs, Leverkusen - Dr. H. Haas, Mannheim-Waldhof - Prof. Dr. K. Hamann, Stuttgart - Prof. Dr. F. Kiermeier, Weihenstephan/Obb. - Prof. Dr. Dr. h. c. W. Klemm, Münster - Prof. Dr. G. Natta, Mailand - Prof. Dr. med. H. Oettel, Ludwigshafen/Rh. - Dr. H. Raab, Leverkusen - Prof. Dr.-Ing. W. Reerink, Essen - Dipl.-Ing. E. Römer, Darmstadt - Dr. E. Thelen, Bad Homburg v. d. Höhe - Prof. Dr. E. Wicke, Münster - Prof. Dr.-Ing. Dr. h. c. K. Winnacker, Frankfurt/M.-Höchst

herausgegeben von

DR. DR. h. c. WILHELM FOERST

Redaktion

Dr. Hertha Buchholz-Meisenheimer

19. BAND

Zement bis Zwischenprodukte

Mit 66 Abbildungen

URBAN & SCHWARZENBERG · MÜNCHEN · BERLIN · WIEN

1969

BEST AVAILABLE COPY

ZEMENT

Beton s. Baustoffe, 4. Bd., S. 215/29.

Zementtypen und Anwendungsbereich. Zement ist ein hydraulisches Bindemittel. Darunter versteht man einen Stoff, der nach dem Anmachen mit Wasser sowohl an der Luft als auch unter Wasser erhärtet und hart bleibt. Er unterscheidet sich von den übrigen hydraulischen Bindemitteln durch seine höhere Festigkeit.

Für die verschiedenartigen Zemente bestehen in den einzelnen Ländern Normen, in denen Zusammensetzung und Bezeichnung sowie die Mindestanforderungen für die Eigenschaften festgelegt werden. Die in der Bundesrepublik genormten Zemente sind in Tabelle 1 zusammengestellt. Sie werden durch amtliche oder amtlich anerkannte Prüfstellen laufend überwacht.

Tabelle 1. Normenzemente

Bezeichnung	*DIN*	Genormt seit
Portlandzement	*1164*	1878
Eisenportlandzement		1909
Hochofenzement		1917
Traßzement	*1167*	1941
Sulfathüttenzement	*4210*	1953

Gemäß den deutschen Baubestimmungen sind in der Bundesrepublik außerdem Ölschieferzement, Sucvit-Traßzement und Traßhochofenzement amtlich zugelassen, z. T. jedoch mit gewissen Einschränkungen der Anwendung. Die Zemente werden in der Bundesrepublik in drei Güteklassen geliefert. Ihre technischen Kennzeichen 275, 375, 475 sind die nach 28tägiger Erhärtung geforderten Mindestwerte der Normenfestigkeit, ihre Zusammensetzung ist an den Abkürzungen PZ für Portlandzement, EPZ für Eisenportlandzement, HOZ für Hochofenzement, TZ für Traßzement und SHZ für Sulfathüttenzement zu erkennen.

Der wesentliche Bestandteil dieser Zemente ist der Portlandzementklinker, der durch Erhitzen einer entsprechend zusammengesetzten Rohstoffmischung (s. S. 6) bis zur Sinterung hergestellt wird und hauptsächlich aus Tricalciumsilicat, Dicalciumsilicat, Tricalciumaluminat und Calciumaluminatferrit besteht.

Portlandzement erhält man durch Feinmahlen von Portlandzementklinker unter Zusatz von Gips oder Anhydrit in Mengen bis zu 6,5%. Portlandzement mit erhöhtem Sulfatwiderstand (s. S. 29) wird aus einem Klinker hergestellt, der neben Calciumaluminatferrit wenig oder kein Aluminat enthält (Ferrarizement). Weißer Portlandzement entsteht aus einem Klinker ohne färbende Bestandteile, d. h. in erster Linie ohne Aluminatferrit.

Zu den Portlandzementen gehören auch der Erzzement und der Kühlzement, benannt nach dem Zementchemiker H. Kühl. Sie werden heute nicht mehr hergestellt. Zur Herstellung von Erzzement wurde ein Klinker mit stark vermindertem Tonerde- und hohem Eisenoxydgehalt